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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,051	12/19/2005	Jianbo Tian	CN02 0033 US	8083
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EXAMINER				
LEE, ANDREW CHUNG CHEUNG				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,051

Applicant(s)

TIAN ET AL.

Examiner

Andrew C. Lee

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-20 and 23-31 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/22/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action in response to the Application #10540051 filed on 12/19/2005 is entered.

Claims 1 – 31 are hence entered and presented for examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 6/22/2005 was filed, and the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

4. The abstract of the disclosure is objected to because the abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52 (b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text. Correction is required. See MPEP § 608.01(b).

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Regarding Fig. 1, the labeled reference characters — D1+poll, D2+ack+poll, D3+ack+poll, D4+poll, U1+ack, U2+ack, U4+ack — are indicated in the drawing, but they are not addressed and described in the specification; Refer to FIG. 2, the hand-written reference numbers 1, 2, 3, 4, 5, 6, 7 are marked and indicated in the diagram; however, they are not disclosed and described in the specification, the labeled reference characters — D1+poll, D2+poll, D3+ack+poll, D4+ack+poll, U2+ack, U1+ack — are indicated in the Fig. 2, but they are not addressed and described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to because it is not clear what the blacked portion of NAV indicates as shown in Fig.1 and Fig. 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter "SPIFS" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

8. Claim 1 is objected to because of the following informalities:

Regarding claim 1, the acronym "LAN" should be spelled out in full text at least once. For example, contention free period (CFP) as in lines 2 – 3 of claim 1.

Appropriate correction is required.

Regarding claim 1, an article "a" should be inserted before "predetermined value" of step a. Appropriate correction is required.

Regarding claim 1, an article "the" of "the said variable" in line 10-11 should be deleted. Appropriate correction is required.

Regarding claim 1, an article "the" of "the said mobile terminal" in line 13 should be deleted. Appropriate correction is required.

Regarding claim 4, the acronym "SPIFS" should be spelled out in full text at least once. For example, contention free period (CFP) as in lines 2 – 3 of claim 1. Appropriate correction is required.

Regarding claims 2 to 16, the indefinite article "A" of the claimed subject matter "A method" should be corrected as "The method".

Regarding claims 18 to 31, the indefinite article "A" of the claimed subject matter "A wireless LAN system" should be corrected as "The wireless LAN system".

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 1, the claimed subject matter "it will adjust its variable" is ambiguous. It is not clear the pronoun "it" and the possessive pronoun "its" refers to. Does it refer to "the mobile terminal" or "the access point". Clarification is required.

Claim 1 recites the limitation "the data frames" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the shared medium" in line 10. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the shared medium" in line 12, and "the control of medium" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the network allocation vector" in line 16. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "said station" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 3, the claimed subject matter "it adjust its NAV" is ambiguous. It is not clear the pronoun "it" and the possessive pronoun "its" refers to. Clarification is required.

Claim 4 recites the limitation "the value corresponding to the SPIFS" in lines 2 – 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the value corresponding to the SPIFS" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the target beacon transmission time" in lines 16 - 17. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 recites the limitation "the point coordinator" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said point coordinator" in line 22, "the point coordination" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "the point coordinator" in line 4, "the number of the stations" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 11, the claimed subject matter "those who do not respond" is ambiguous. It is not clear the pronoun "those who do not respond" refers to. Clarification is required.

Claim 12 recites the limitation "it" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the control of the shared medium" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the variables of all the mobile terminals" in line 22, "the values corresponding to DIFS" in line 23, "the variable of them" in line 24. There is insufficient antecedent basis for this limitation in the claim.

Claims 16, 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 16, 31, the claimed subject matter

"IEEE802.11 protocol" is ambiguous. It is not clear which year and version of IEEE 802.11 protocol refers to. Clarification is required.

Claims 17 – 31 have similar deficiencies as addressed in claims 1 – 15. It is recommended that the applicant(s) takes appropriate action to correct all the 112 second paragraph issues.

Claims 14 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 14 and 29, the claimed subject matter "if there are still some mobile terminals in the table, then the variables of them are set smaller than those of the other mobile terminals so as to increase their contention power in contention period " is ambiguous. It is not clear what "some" refers to. The claimed subject matter is indefinite, and it is not clear "the variables of them" refers to. "those of the other mobile terminals in the table" is very vague and not clear which is which mobile stations referring to. Clarification is definitely required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 – 4, 7 – 20, 23 – 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho et al. (US 200200714491 A1).

Regarding claims 1, 17, Ho et al. disclose a method and wireless LAN system (Fig. 7a, Fig. 7b) for enhancing point coordination function in wireless LANs, which is used for a wireless LAN protocol, including contention free period (CFP) and contention period (CP) ("Point Coordination Function", "contention-free period", "contention period"; Fig. 2, Fig. 4, paragraphs [0038], [0042]), said method includes following steps: a. in a contention free period, when a mobile terminal is polled by an access point (AP) and has no data to send, it will adjust its variable to predetermined value (paragraph [0045]); b. When the data frames are ready for transmission, the mobile terminal starts to detect the share medium, when the share medium is free, the said variable starts to count (paragraphs [0048], [0049]); c. If said variable counts to a determined value and the share medium is still free, then the said mobile terminal gains the control of medium and start to send data frame (paragraph [0050]).

Regarding claim 2, 18, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein said variable is the network allocation vector (NAV) of the mobile terminal ("network allocation vector"; paragraph [0048]).

Regarding claim 3, 19, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein after said station gains the control of medium and starts to send data frame in this CFP, it adjusts its NAV to the maximum value (paragraph [0060]).

Regarding claim 4, 20, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein said predetermined value is the value corresponding to the SPIFS ("A PIFS is equal to one SIFS plus one slot time"; paragraph [0038]).

Regarding claim 16, 31, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein said wireless network protocol is IEEE802.11 protocol (Fig. 2, paragraph [0042]).

Regarding claims 7, 23, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein in step a after the mobile terminal adjusts its variable to a predetermined value, in contention free period, it does not change its NAV even if it receives another beacon frame at the target beacon transmission time(TBTT) (paragraphs [0043], [0051]).

Regarding claims 8, 24, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein the point coordinator determines that a number of stations can contend for the control of the shared medium (paragraph [0071]).

Regarding claim 9, 25, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein said point coordinator establishes a table, to which mobile terminals who have no data frame to send in CFP period when the point coordinator is polling are appended in turn (paragraph [0062]).

Regarding claim 10, 26, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein the point coordinator

limits the number of the stations in the table lower than a predetermined threshold value (paragraphs [0063], [0103]).

Regarding claim 11, 27, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein when the number of the mobile terminals in the table reaches the said threshold, the point coordinator will send a control signal to those who do not respond to the poll of the point coordinator, forbidding them to change said variable (paragraphs [0063], [0103]).

Regarding claim 12, Ho et al. disclose the method claimed enhancing point coordination function in wireless LANs, wherein in CFP period, if a mobile terminal in the table manages to send data frame by contention, it will be removed from the table (paragraph [0103]).

Regarding claim 13, 28, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein in the end of CFP, the variable of the mobile terminal who sent data frame by contention in CFP period is set to a value corresponding to distributed (coordination function) inter-frame space (DIFS) and then contends for the control of the shared medium in the contention period (Fig. 3, paragraph [0065]).

Regarding claim 14, 29, Ho et al. discloses the method and system claimed enhancing point coordination function in wireless LANs, wherein when the variables of all the mobile terminals are set to the values corresponding to DIFS, if there are still some mobile terminals in the table, then the variables of them are set smaller than

those of the other mobile terminals so as to increase their contention power in contention period (paragraph [0065]).

Regarding claim 15, 30, Ho et al. disclose the method and system claimed enhancing point coordination function in wireless LANs, wherein in the end of the CFP, the point coordinator clears the table ("removing stations from the list"; paragraph [0103]).

Allowable Subject Matter

12. Claims 5, 6, 21, 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Choi et al. (US 7274707 B2).
- b) Kim et al. (US 20030087645 A1).
- c) Ho et al. (US 7031287 B1).
- d) Diepstraten et al. (5329531).

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571)272-

3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C Lee/
Examiner, Art Unit 2619
<9/22/2008>

/Edan Orgad/
Supervisory Patent Examiner, Art Unit 2619